West Valley Demonstration Project (WVDP)

Site Description: The WVDP is located 35 miles south of Buffalo, New York. Originally built and commercially operated as a reprocessing plant for spent nuclear fuel, the site was shut down in 1972, and pursuant to a lease arrangement, was returned to the property owner, the State of New York, in 1976. As a result of reprocessing operations, approximately 600,000 gallons of liquid high-level radioactive waste was generated and stored in underground steel tanks.

In 1980, Congress passed the WVDP Act, which directed the U.S. Department of Energy (DOE) to demonstrate solidification and preparation of high level radioactive waste for permanent disposal. In 1982, per the requirements of the WVDP Act, the DOE assumed operational control of the site.

Mission: DOE's primary mission at the site is to safely turn radioactive liquid into a manageable solid glass. The WVDP Act of 1980 requires DOE to: (1) solidify the high-level liquid waste at the West Valley site into a solid form suitable for transport and disposal; (2) transport the solidified waste, as soon as possible, to a Federal repository for permanent disposal; (3) dispose of the Project-generated low-level and transuranic wastes; and (4) decontaminate and decommission facilities used by the Project according to requirements prescribed by the Nuclear Regulatory Commission (NRC). To date, the Project has made significant progress toward high level waste solidification; approximately 95 percent of the radioactivity originally contained within the underground storage tanks have been removed and stabilized.

Management: The lead program secretarial office for WVDP is the DOE Office of Environmental Management, which provides funding and direction through the DOE Ohio Field Office to the West Valley Demonstration Office. This project is being conducted in cooperation with the New York State Energy Research and Development Authority. In accordance with the WVDP Act, DOE is responsible for funding 90 percent of the Project and the State of New York funds the additional 10 percent. There are approximately 26 DOE and 807 West Valley Nuclear Services Company (WVNS) employees at the site (these numbers do not include subcontractors).

Budget: The annual DOE budget for WVDP is approximately $107 million for FY 1999 and the same for FY 2000.

Integrated Safety Management (ISM) Implementation Status: The Authorization Agreement was signed by the Field Office Manager in October 1998. ISM Phase I and II implementation was completed and verified in November 1998.

Significant Events: There was one significant environment, safety, and health related event in the last two years. On August 10, 1999, during clearing of the Concentrator Feed Make-up Tank level and density indication probes with steam, radioactive liquid was drawn from the tank into steam lines outside the shielded radioactive cell of the Vitrification Facility. An investigation of the event was completed by WVNS, and an independent investigation was completed by the local DOE project office. Corrective actions are under way. The contaminated steam lines have been removed from the facility and pose no further concern. In October 1999, the DOE Office of Enforcement and Investigation conducted a review of this event and is expected to issue a report by the end of 1999.

Office of Oversight Status: In January 1997 the Office of Oversight conducted a follow-up review of the November 1996 incident in which dilute radioactive material migrated into the demineralized-water line outside of the containment cell at the Vitrification Plant. The Oversight report, issued in April 1997, identified concerns associated with management's acceptance of informal operations, delay in reporting the event as an unusual occurrence, and inadequate hazards analysis and system configuration control. In addition, the report found that the absence of accurate and time-coordinated event data, operator logs, personnel event statements, and timely event critique limited the effectiveness of the DOE, WVNS, and Office of Oversight investigations and root-cause analysis. All corrective actions from this event have been fully implemented.

Key Waste Management Units

Waste Management Unit*	Mission /Status	Principal Hazards
Underground High-Level Waste Storage Tanks	Over 95% of the liquid high level waste has been removed from the tanks and vitrified. Tank closure options are being analyzed as part of an on-going environment impact statement for project completion.	Exposure to radioactive materials. Air, surface water and groundwater are being monitored. No hazardous substances have been detected in these media.
Former Nuclear Fuel Reprocessing Building	Now serves as the storage facility for the high-level waste glass canisters. Most of the waste is contained in process cells within the building. As the only commercial reprocessing plant to ever operate in the country, decommissioning criteria must be developed by NRC.	Exposure to radioactive materials. Sr-90 groundwater contamination plume is being mitigated using pump & treat technology. In 1999, a permeable barrier treatment wall was installed on a portion of the plume to test the effectiveness of this technology and potential application on other portions of the plume.
5.5-Acre Nuclear Regulatory Commission-Licensed Disposal Area (NDA)	Used by the former commercial operator (Nuclear Fuel Services) from the mid-1960s until the early 1980s; and by the Project for low-level waste disposal until 1985, when disposal operations ceased. Contains both low-level and high-activity waste, and potential mixed waste.	Exposure to radioactive materials. Exhuming the NDA would have to be done remotely. Air, surface water and groundwater are being monitored. No hazardous substances have been detected in these media.

*12 waste management units have been identified for cleanup following vitrification, in an environmental impact statement being jointly prepared by DOE and New York State, with the NRC as a cooperating agency.

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